# King County 2010 Information Technology Maturity Progress Report

March 2010

Microsoft

# Table of Contents

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# Executive Summary

King County undertook a study to evaluate the maturity of its Information Technology (IT) practices in June of 2008. Based on Gartner's and other industry leaders' definitions, Microsoft co-developed the Infrastructure Optimization model for IT infrastructure. The model places an organization into one of four categories:

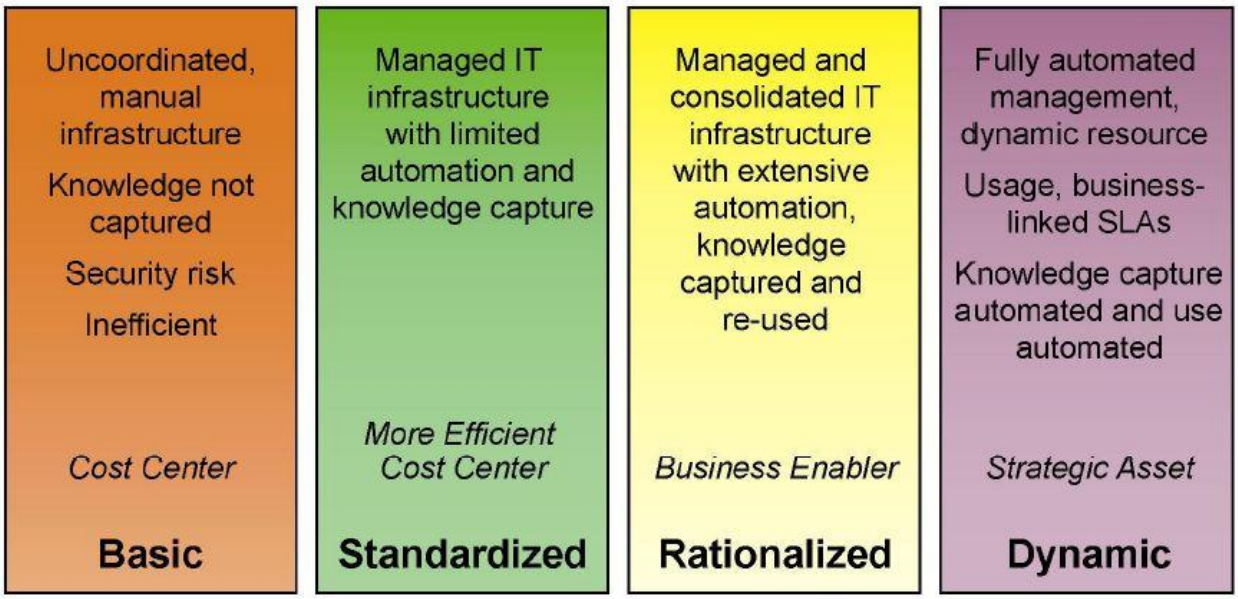



*Figure 1 – Microsoft IT Maturity Model*

## Findings in 2008

Upon completing the exercise, King County IT practices were found to be in the Basic level. This translates to a higher cost of providing IT services, numerous manual and/or duplicative processes, and a need to develop standards and governance.

The specific areas that needed improvement were:

- Desktops and Servers Management and Operations
- Information Technology Security and Processes
- ITIL/COBIT-based Management Processes

These results formed a baseline of maturity for King County's IT operations.

## Plan

The CIO management team in the executive branch for King County IT identified specific capabilities[1] that needed to be established in order to move the county's IT practices from the Basic level to the Standardized level.

## Update for 2010

In January 2010, King County embarked on an effort to re-evaluate the maturity of the county's IT operations and to determine progress against the baseline established by the 2008 study. Refer to Appendix A for a list of the six capabilities identified in the 2008 study.

The Optimization exercise was designed to help organizations determine their IT maturity level (baseline). It also provides guidance on areas in which to focus on developing IT maturity. Lastly, it is intended to be used on an ongoing basis to help track the progress of IT maturity over time. The 2010 re-evaluation is the county's effort to use the tool to track progress on an ongoing effort. This report is the deliverable as a result of the 2010 re-evaluation.

Upon completion of the 2010 re-evaluation of IT maturity, the King County CIO and the Management Team are pleased to report that all of the six capabilities that were identified to be lacking in the County's IT operational practices in 2008 have been resolved. Lacking these six capabilities was the reason why the County was rated at the Basic Level of maturity. Data provided by the County now shows that the **County is operating at the Standardized Level of maturity**.

The 2008 study focused primarily on the county's IT infrastructure. It did not cover project management and application development. This 2010 re-evaluation expanded the study by incorporating results from an assessment around the maturity of project management and application development.

## Summary and future Roadmap

King County has provided data and information to determine that it has reached the Standardized Level of IT Maturity using Microsoft's Infrastructure Optimization model. The 2008 study as well as the 2010 re-evaluation studies confirm the results of the CIO Management team's efforts around IT maturity. The evaluation studies were collaborative effort between King County and Microsoft.

### Roadmap

As defined in figure 1 in the previous page, at the Standardized Level of maturity, King County IT has created standards for operations and achieved insight into its operations. At this point, King County still has limited automation in its operations, which is the key capability identified in the next level of maturity – Rationalized Level.

The county's IT leadership in the executive branch would like to move IT into the Rationalized Level. The adoption of automation would require the investment in tools and training. The benefits of automation

[1] Six significant capabilities were identified and projects were developed with the goal of developing these capabilities. Refer to Appendix A for the list of capabilities.

would be a faster and leaner IT organization with the ability to move staff into more value-added knowledge-based activities rather than manual work. As such, in order to get to the Rationalized level, it would require a higher level of investment than what was required to get to the Standardized level. However, the benefits[2] of being at the Rationalized level are also very significant and will be experienced throughout the organization, not just IT. The value to be realized at the Rationalized level is dependent upon all IT organizations in the county being one IT.

[2] For a full description and value discussion of the benefits at each maturity level, please refer to the Infrastructure Optimization white paper that is included in this packet.

# Capability 1 – Automated Tracking of Hardware and Software Assets on Desktops

Having an automated way of tracking and managing hardware and software assets in an organization provides a comprehensive solution for addressing and resolving change and configuration needs. The availability of such information also allows the organization to make better decisions about what is needed. Future purchase decisions can then be made based on such information, thereby optimizing IT dollars by purchasing only what is needed.

This capability forms the foundation for which further automation can be built. Automatic configuration tools at the Rationalized level will use inventory information to make configuration changes or enforcement. Automated acquisitions and deployments at the Rationalized level will also require asset information.

At the Standardized level, we are only concerned about the asset information and not the other automation technologies that will be incorporated at a later stage. This capability is a pre-requisite for the Rationalized level and future automation capabilities associated with that level.

**Target – Automated Tracking of Hardware and Software Assets for 80% or more of desktops**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | No | No | No | Yes | Yes | No | No | No |
| 2010 | Yes | No | No | Yes | Yes | Yes* | Yes* | Yes* |
| Desk-tops | 466 | 200 | 883 | 393 | 1523 | 1566 | 1408 | 200 |

* These organizations are part of the LANDesk pilot group that is already using the automated hardware and software asset tracking that is part of SCCM.

Total number of (production) desktops county-wide = 6,693

Total number of desktops under automatic hardware and software asset management = 5,556

% of desktops under automatic hardware and software asset management = 83%

## Progress Report

**In 2008:**

Total number of desktops under automatic hardware and software asset management = 1916

% of desktops under automatic hardware and software asset management in 2008 = 28.6%

**In 2010:**

As of March 2010, 83% of the county's desktops fall under the management of a solution that automatically tracks hardware and software. There is a plan to continue deploying the solution until 100% of the desktops' hardware and software inventory are management. Since this metric exceeds the target of 80% of desktops, the county has successfully made progress

The county improved from 28.6% to 83% as a result of efforts to develop this capability over the last two years.

# Capability 2 – A Plan to manage a maximum of 2 Operating System versions for 80% of their desktops

Studies have shown that organizations that limit the number of supported operating systems can achieve better total cost of ownership results because of the need to manage fewer variables such as patches, configuration, and associated software versions. This applies to production end-user desktops and should exclude special operations and applications (e.g. batch jobs, robots, and security systems). The importance of limiting the number of OS versions at the standardized level is a pre-requisite for automatic deployment tools at the Rationalized level because it significantly simplifies the environment, thereby making automated deployment more effective and successful.

**Target – Have a plan to manage a maximum of 2 OS versions for 80% of their Desktops**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | No | Yes | No | No | Yes | No | Yes | Yes |
| 2010 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Desk-tops | 466 | 200 | 883 | 393 | 1523 | 1566 | 1408 | 200 |

Total number of (production) desktops county-wide = 6,693

Total number of desktops with a plan to support (max) 2 OS versions only = 6,693

% of desktops with plan to support (max) 2 OS versions = 100%

## Progress Report

**In 2008:**

Total number of desktops with a plan to support (max) 2 OS versions only = 3,331

% of desktops with plan to support (max) 2 OS versions in 2008 = 49.8%

**In 2010:**

As if March 2010, 100% of the desktops in King County come under a plan that states the supported OS would be Windows XP. The plan specifically states previous versions of Windows are not part of the standard for support, and at this time does not address future versions of Windows (Vista or 7).

The county improved from 49.8% to 100% as a result of efforts to develop this capability over the last two years.

The county's plan to support a maximum of two Operating Systems is evolving to include Windows 7 as a standard in addition to XP. Microsoft recommends the County explore the benefits of adopting Windows 7 as the current Operating System standard because Windows XP is at the end of life for support. Furthermore, Windows 7 provides technologies to decouple the hardware from the drivers, thereby making a true single managed image for all devices, regardless of hardware type, a reality. This will *significantly* reduce the amount of effort required to manage compared to the current method of having to manage multiple images for different hardware types.

# Capability 3 – Formalized Processes for IT support services, problem management, change management and configuration management

The use of ITIL and COBIT-based best practices have shown that organizations can reduce IT cost because of their ability to apply consistent change, recover (rollback) from changes that cause issues, lower risks of implementing changes that may cause problems because of the ability to detect incompatible of conflicting changes, et cetera. The methodical approach to a managed change process greatly reduces risk and promotes problem solving, leading to less downtime, loss productivity, and a greater agility to incorporate new technologies. IT organizations have also reported significantly better ability to meet Service Level Agreements (SLAs) through such formalized processes. ITIL and COBOT-based formalized processes are industry standards and are also becoming compliance requirements for many regulatory programs and functions.

**Target – Have a formalized process for IT support services, problem management, change management, and configuration management.**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | No | Yes | No | No | Yes | Yes | Yes | Yes |
| 2010 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Desk-tops | 466 | 200 | 883 | 393 | 1523 | 1566 | 1408 | 200 |

## Progress Report

Total number of desktops supported by the organization = 6,693

**In 2008:**

Total number of desktops managed in a formalized fashion = 4,951

% of desktops managed in a formalized fashion = 74%

**In 2010:**

As if March 2010, 100% of desktops and their related applications are managed through a formalized solution that incorporates change management, problem tracking/resolution (ticketing), and configuration management abilities. These are key elements in an ITIL/COBIT-based practice.

This capability is useful only if applied county-wide as a standard, and to include all departments. Anything less than 100% does not qualify an organization to be mature in its ITIL/COBIT-based approach to formalized management. Understanding the importance of this capability, executive branch IT spent a significant amount of time working on this capability. Compared to other capability areas, the most time was spent on developing this standard.

The county improved from 74% to 100% as a result of efforts to develop this capability over the last two years.

# Capability 4 – Consolidating Branch Infrastructure and Leveraging Network Solutions like the Wide Area Network (WAN) Optimization

The wide area network (WAN) is the network connection between different buildings within an organization. This is the service paid to carriers to provide the connectivity, such as T1, T3, ISDN, MPLS, and other types of connections that connect remote locations together. As the reliance by businesses on networking technology to incorporate not just data but also voice and video increases the need for increased bandwidth requirements. The increase in the need for more bandwidth translates into greater service and subscription charges to organizations.

The strategy to manage and/or lower these charges is two-fold:

1. Reduce the number of remote locations (branch office consolidation) so the organization will need fewer WAN links, and/or
2. Use technologies that optimize existing links so that all available bandwidth is used and properly managed. Examples of such technologies include:
    a. Compression (e.g. WAAS and BITs)
    b. Management and Optimization (e.g. Quality of Service (QoS) incorporation)
    c. Trunking

It is not always possible for an organization to reduce branch offices. However, most organizations can and should explore and invest in network technologies that optimize and manage the use of bandwidth.

This particular capability is undertaken solely by King County central IT (OIRM) because OIRM manages the WAN for the county. The county's WAN devices are primarily Cisco devices and this capability calls for specific technologies to be explored, such as Cisco's WAAS.

**Target – Consolidate branch infrastructure or leverage networking solutions that support WAN optimization**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | Na | Na | Na | Na | Na | Na | Na | No |
| 2010 | Na | Na | Na | Na | Na | Na | Na | Yes |

## Progress Report

In 2009, OIRM worked with Cisco Systems to extensively evaluate the county's WAN with specific recommendations around WAN optimization. The county then subsequently incorporated the recommendations made by their WAN hardware vendor. The report and deliverables from this study is included as a separate document for reference. Please refer to those documents[3] for more detailed information regarding this effort.

[3] These documents are available directly from the Office of Information Resource Management (OIRM).

# Capability 5 – The use of virtualization to consolidate and simplify management of 80% of test[4] environments

Virtualizing test environments can yield significant benefits because of the reduced need to maintain an inventory of potentially expensive server hardware. The ability to manage and roll back changes could also potentially reduce the amount of labor needed to manage a test environment which traditionally has a high number of rebuilds for the Operating System and configuration of software. In this study, we are only looking at the server hardware. It is recommended that this be extended to the desktop environment if there is a high number of desktops that serve as "clients" in the test environment.

**Target – Use of virtualization technology to simplify 80% of their test environment**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | Yes | No | No | No | Yes | No | No | No |
| 2010 | **See Below** | | | | | | | |
| Virtual Test Servers | 1 | 0 | 3 | 3 | 13 | 25 | 4 | 12 |
| # Virtual Candi-dates | 1 | 5 | 3 | 3 | 13 | 28 | 11 | 12 |
| Total # Test Servers | 1 | 5 | 3 | 5[5] | 13 | 28 | 11 | 50[6] |
| Total # Servers (Test and Prod) | 17 | 21 | 43 | 103 | 111 | 124 | 124 | 143 |
| % Test Environ. Virtual | 100% | 0% | 100% | 100% | 100% | 89% | 36% | 100% |

[4] Test servers are defined as servers in the test environments that are candidates for virtualization. Test servers used to test applications and/or functions that do not support virtualization are not included in the population of test servers that can be virtualized. The Host Server of the Virtual environment was not counted as a server.
[5] Total 7 servers but 2 are database servers and cannot be virtualized.
[6] Out of 50 servers, 12 are virtualized with 2 not able to support virtualization. The remaining 36 servers have customer Service Level Agreements (SLAs) that may not permit virtualization by OIRM.

## Progress Report

Total number of test servers that can be virtualized = 76

Number of servers virtualized = 61

% of servers virtualized = 80.3%

The test environment for servers is at 80.3%. The servers that are candidates for virtualization are servers that do not have any barriers to may prevent them from being virtualized. Barriers to server virtualization may exist in the form of technology and/or performance requirements[7], or servers that belong to customers with specific Service Level Agreements (SLAs) that may not support virtualization. There are 36 test servers hosted at OIRM's datacenter where SLAs need to be re-negotiated so that they can be virtualized.

Microsoft recommends this analysis be extended to the workstation test environment if there is a significant number of client PC's and laptops in labs and test environments with different configuration. It is also recommended that developers not have multiple machines with different configuration but rather use virtual environments where possible for testing and debugging purposes.

[7] Examples - databases or application servers that are not supported in a virtual environment

# Capability 6 – Have a formalized information security risk management process, including conducting security risk assessments and corresponding mitigation at appropriate levels

A formalized information security risk management ensures that an organization is better able to identify potential security risks, as well as respond to incidents in a timely fashion. A formal information security risk management process would include industry best practices such as an incident response plan, independent third-party audits, and the classification of information into security categories with properly defined access, disclosure, and retention rules. This formalized process should be reviewed on a regular basis to determine its continued adequacy as it relates to the changing landscape of the security landscape.

This capability will not extensively evaluate the adequacy of King County's Information Risk Management process, but rather to determine whether such a process exists in the form of a policy and/or procedure. Ideally, a single comprehensive policy/procedure should exist for the entire organization but the diverse business needs of departments that are governed by different standards (e.g. HIPAA) may require multiple policies, procedures, and processes. However, each department in the Executive Branch should be governed by a formalized information risk management process.

**Target – Have a formalized information security risk management process**

## Organization Status Report

| | Adult & Juvenile | Dev. & Environ. | Exec. Services | Community & Human Services | Public Health | Transport-ation | Natural Resources | OIRM |
|---|---|---|---|---|---|---|---|---|
| 2008 | No | Yes | No | No | Yes | Yes | Yes | Yes |
| 2010 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

## Progress Report

All departments have reported having an information risk management policy, procedure, and/or process[8]. In addition, several departments have recently undergone a third party audit and have such audits scheduled on an appropriate ongoing basis.

[8] This study determines the existence of an information risk management policy, procedure, and/or process. Determining the comprehensiveness and adequacy of the policy/procedure/process is beyond the scope of this study. Please directly request from the respective departments for the documents pertaining to its information risk management process and practices.

## Expanded study 1: Maturity of Application Development Practices

This section is also known as the Application and Productivity Optimization (APO), and is differentiated from the core Optimization exercise because it focuses only on practices around the development of applications.

The results of the APO can be found in Appendix B.

## Expanded study 2: Project Management Maturity

King County used a separate, industry recognized evaluation process to determine the maturity of the county's approach to Project Management for IT projects. This is based on Carnegie Mellon University's (CMU) Capability Maturity Model (CMM). The model was originally developed as a tool for objectively assessing the ability of government contractors to successfully undertake a software project. Since King County is a government agency, it is appropriate that the organization adopts a model that was originally developed with public sector in mind. For this assessment, King County utilized a tool developed by Info Tech to help determine the county's Project Management maturity against the CMM. The result from the assessment is attached as Appendix C[9].

## Conclusion

Since 2008, King County has made steady progress to address operational areas rated at the Basic Level of maturity. Information and data from the 2010 re-evaluation of the Infrastructure Optimization Study shows the County has achieved the Standardized Level of maturity.

The Standardized Level of IT Maturity is a milestone for operational efficiency as it provides the foundation upon which automation can successfully be implemented because configuration variables have been minimized.

[9] The full assessment including the questions and responses from the Info Tech tool is available directly from the Office of Information Resource Management (OIRM)

# Appendix A – Six Capability Areas (gaps) addressed by King County

| Capability | Required for Standard Level | King County Status in 2008 | King County Status in 2010 |
|---|---|---|---|
| Does this organization have automated tracking of hardware and software assets of 80% or more of their desktops | ✓ | X | ✓ |
| Does this organization use virtualization to consolidate and simplify management of 80% of their test environments? | ✓ | X | ✓ |
| Does this organization have a plan to manage a maximum of 2 OS versions (not including x64/x86 platform or HAL-related multipliers) for 80% of their Desktops | ✓ | X | ✓ |
| Is this organization consolidating branch infrastructure leveraging networking solutions (example of network solutions include WAN Optimization/acceleration devices, Integrated Router WAN Optimization or Wide Area Application Services (WAAS) appliances from Cisco, Steelhead, Riverbed, NetScalar from Citrix) | ✓ | X | ✓ |
| Does this organization have a formalized information security risk management process, including conducting security risk assessments (self-assessment or 3rd party assessment) and corresponding mitigation at appropriate intervals? | ✓ | X | ✓ |
| Does this organization have formalized processes for IT support services, problem management, change management, and configuration management? | ✓ | X | ✓ |

# Appendix B – Results of Application Development Maturity

| Capability | Sub-Capability | Question | King County's Answers | Comments |
|---|---|---|---|---|
| **Development** | Development Platform | Please indicate your customer's current adoption of development tools and the platforms they target? | Maintenance only on legacy software. Approximately 80% active development on modern tools and platforms and approximately 20% of new development on next generation development tools and platforms | |
| **Development** | Development Platform | What is the current importance and impact of customer's application development projects? | Applications have a defined business impact, but may not be totally mission-critical | |
| **Development** | Development Platform | Please indicate your customer's level of support for delivering web applications? | Limited monitoring and/or management of Web applications | |
| **Development** | Application Lifecycle Management (ALM) | How would you define your customer's tools capability? | Utilize an IDE along with **non-integrated 3rd party tools** for additional project definition, design, development, testing, deployment and management capabilities | Mixture of these two environments |
| | | | Utilize an IDE along with **integrated 3rd party tools** for additional project definition, design, development, testing, deployment and management capabilities | |
| **Development** | Application Lifecycle Management (ALM) | Does your customer have a formalized software development process? | Uses one or more structured processes across all teams | |
| **Development** | Application Lifecycle Management (ALM) | What is the arrangement of the application development team member roles for this organization? | Team members with dedicated roles in their departmental development teams | |
| **Development** | Custom Applications | How would you classify the majority (>50%) of your customer's **internal custom development** projects? | Mostly client/server application projects | Mixture of these three environments |
| | | | Multi-tier development projects | |
| | | | Distributed computing across multiple tiers, operating systems or application development frameworks with exceptional requirements that include may include high transactional or data volumes, high reliability and high performance. | |

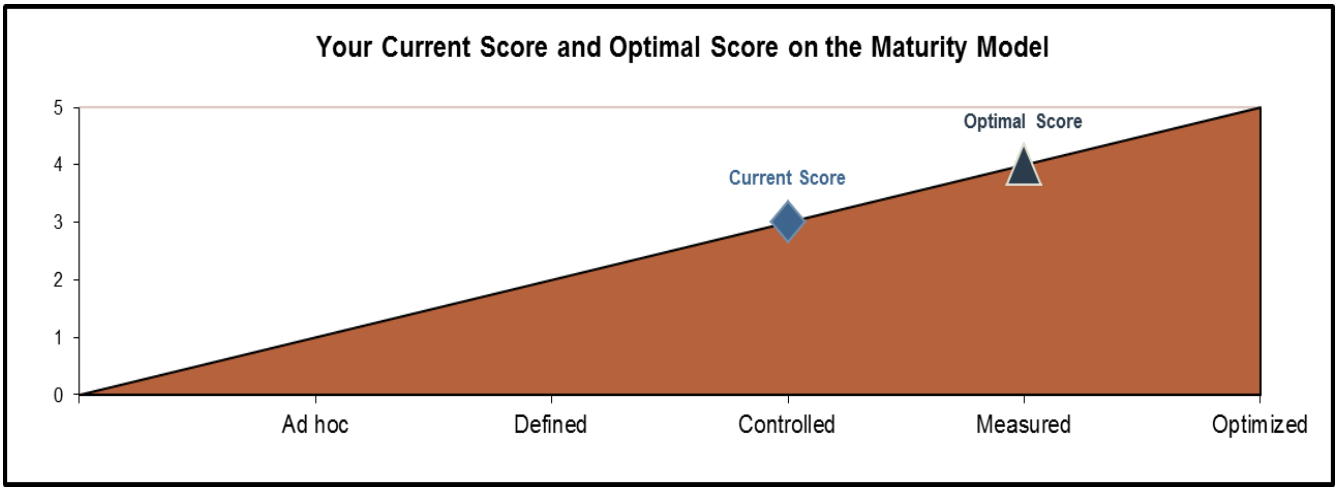
| | | | | |
|---|---|---|---|---|
| **SOA and Business Process** | Process, Workflow & Integration | Please indicate where your customer is in terms of architecture planning? | Has architectural mindset & roadmap around services & processes but they are not enterprise-wide. Customer **does not** have a full time staff dedicated to architectural planning | |
| **SOA and Business Process** | Process, Workflow & Integration | Please indicate where your customer is in terms of web service development maturity? | Has methodology for exposing and consuming web services to facilitate reuse | |
| **SOA and Business Process** | Process, Workflow & Integration | What best describes your customer's level of sophistication on integration activities? | Mostly Point to Point EAI solutions; no enterprise-wide integration | Mixture of these two environments |
| | | | Has an enterprise architecture for integration (ESB, EAI, B2B); Use standardized packaged integration solutions and core processes are integrated across the enterprise | |
| **SOA and Business Process** | Process, Workflow & Integration | Please indicate your customer's level of sophistication in delivering business process management applications? | Automates repetitive tasks (replacing manual paper); has connected and automated some departmental processes that span multiple applications | Mixture of these three environments |
| | | | Core business process automated; process activities monitored; some standalone process have externalized rules | |
| | | | Process abstraction provides dynamic versioning, control, updating, redeploying and workloads adaptability; Workflows automated and use BAM (Business Activity Monitoring) for end-to-end visibility | |
| **SOA and Business Process** | Process, Workflow & Integration | Please indicate your customer's level of sophistication on business to business (B2B) activities | Proprietary (one-off with specific trading-partner) B2B integration or reliance on VAN | |
| **SOA and Business Process** | Process, Workflow & Integration | Please select all that applies to your customer's level of sophistication on business process activities | Provide data from one application to another through manual forms or re-entry of data | Mixture of these five environments |
| | | | Use phone/fax or manual entry for B2B; worried about trading partner or industry compliance | |
| | | | Use hard-coding or workarounds for integration across departments | |
| | | | Has automated B2B functions but scaling across B2B standards-or linking B2B to internal system/process is difficult | |
| | | | Has department-level process automation but can't optimize processes due to lack of process visibility/data | |

| | | | | |
|---|---|---|---|---|
| **Data Management** | Data Warehousing | Please describe your data warehousing strategy | Departmental data marts | |
| **Data Management** | Data Warehousing | Thinking of your major data warehouse systems, please describe your management environment and policies. | Only leverage standard database management tools and techniques | |
| **Data Management** | Data Infrastructure - ISV Line of Business | Please describe the high availability strategy and technology for the core line of business applications in your company | Basic Failover support to recover from unplanned downtime | |
| **Data Management** | Data Infrastructure - ISV Line of Business | How does your organization manage performance? | Leverage auto tuning capabilities in database platform | |
| **Data Management** | Data Infrastructure - ISV Line of Business | Please describe your security policies and strategy for the core line of business applications in your company | Granular integrated security model across applications and data tier | |
| **Data Management** | Data Infrastructure - Custom Line of Business | Please describe where you deploy your business logic | Most logic at the application tier, but limited logic at the data tier through stored procedures | |
| **Data Management** | Data Infrastructure - Custom Line of Business | Do you employ a service oriented data architecture in your company? | Multiple data services across integrated infrastructure | |
| **Data Management** | Data Infrastructure - Custom Line of Business | Please describe the integration between database administrators (DBAs) and developers in your company | DBA provides preset, routine services. | |
| **Data Management** | Data Infrastructure - Custom Line of Business | How much time do database administrators (DBAs) spend on routine tasks (backup, monitoring, tuning, etc,) | 80% or more | TBD |
| | | | 60% | |
| | | | 25% | |
| | | | 10% or less | |
| **User Experience** | Client and Web development | Is providing users with an easy to learn, productive User Experience (UX) a priority for your IT organization? | Regards UX as a critical element of application development for differentiation and productivity. Team is investigating future tools and platforms to deliver on UX requirements. | |

| | | | | |
|---|---|---|---|---|
| **User Experience** | Client and Web development | Does your organization gather customer/user requirements throughout your application development process? | There is a continuous process of assessing UX from requirements definition to runtime of a project following user-centered design methodology. | |

| | | | | |
|---|---|---|---|---|
| **User Experience** | Client and Web development | Do you measure the quality and success (ROI) of your applications? | Existing investments in UX with positive results. Uses UX extensively during the definition phase of future projects to frame solution space or opportunity. | |

# Appendix C – Project Management Maturity

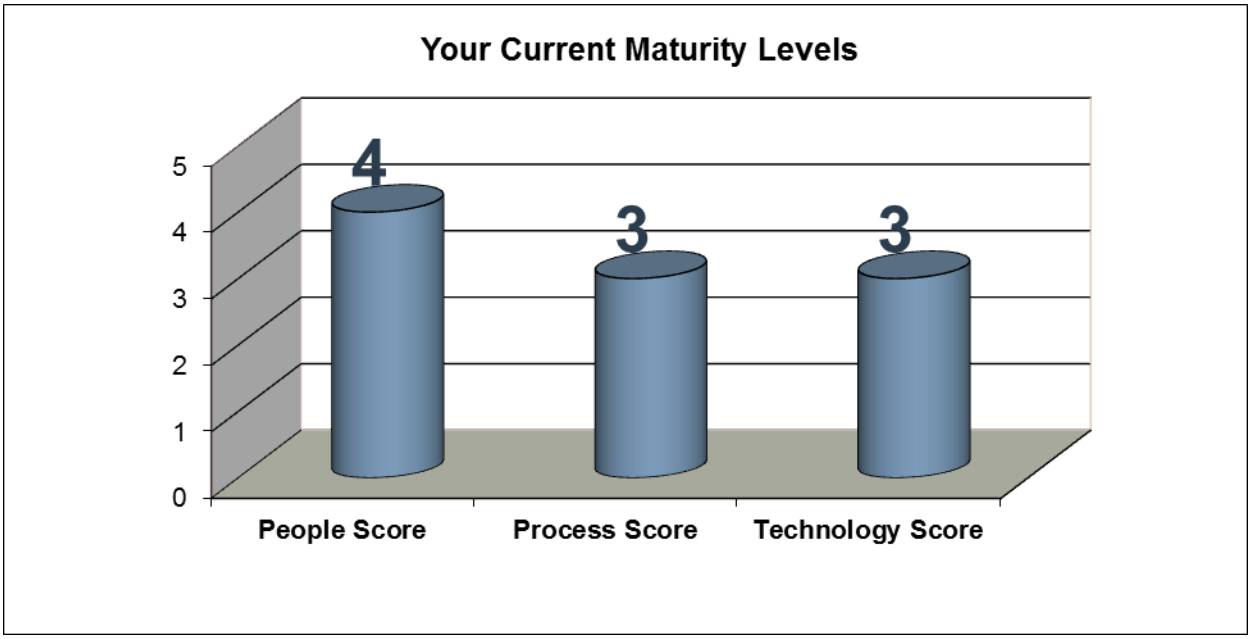



## Your Current Maturity: (3) Controlled

Your current Project Management maturity level is below your optimal level of maturity. If you mature your Project Management discipline, you will likely see an increase in project performance, overall realization of benefits and project manager performance. Please see the "Fundamental Project Management Elements" section below to understand areas for improvement in your People, Process and Technology.

## Your Optimal Maturity: (4) Measured

Your optimal Project Management maturity level is Level 4, Measured. At this level, the use of People, Process, and Technology is quantitatively set and measured. In general, metrics and goals are associated with project manager responsibilities, and processes followed. A project specifc tool is leveraged.




**Your People Maturity (Measured) is currently the same as your overall optimal maturity.**
Consider assigning dedicated project managers to manage projects. Many mature organizations have found that this contributes to improved performance.

Consider developing your project manager's skills in the following areas:

- ♦ Communication
- ♦ Business knowledge
- ♦ Ability to multitask
- ♦ Ability to influence stakeholders
- ♦ People management

**Your Process Maturity (Controlled) is currently lower than your overall optimal maturity.**

In order to improve your overall maturity, the following knowledge areas and process activities should be improved:

- ♦ Integration Management
- ♦ Scope Management
- ♦ Time Management
- ♦ Cost Management
- ♦ Quality Management
- ♦ Human Resources
- ♦ Communication Management
- ♦ Risk Management
- ♦ Project initiation
- ♦ Project planning
- ♦ Project execution
- ♦ Project monitoring
- ♦ Project closing
- ♦ Collection of in-project metrics
- ♦ Overall process review

**Your Technology Maturity (Controlled) is currently lower than your overall optimal maturity**

In order to improve your overall maturity, consider increasing the use of the following tool functions:

- Budget Management
- Risk Management
- Quality Management
- Performance metrics
- Portfolio Management